

**What is claimed is:**

1. An encoder arrangement, comprising  
a motor with a motor shaft on which a timing disk is secured,  
a signal source for generating an optical signal, as well as a beam mask for shaping the optical signal, wherein the beam mask is provided with code bars having pit and land structures having a diffraction and interference structure.
2. The encoder arrangement according to claim 1, wherein the diffraction structure is implemented as a 2D- sub-micrometer grating structure.
3. The encoder arrangement according to claim 1, wherein a mask support is integrated in the beam mask.
4. The encoder arrangement according to claim 3, wherein the mask support comprises an opening for the motor shaft and a mask region with micro-interference structures and macroscopic structures.
5. The encoder arrangement according to claims 1, wherein the beam mask is made of a polycarbonate, wherein regions between the code bars are made transparent and the pit and land structures include a thickness difference  $D$ , which satisfies the following function:  
$$D = L / 2 (n-1)$$
  
with  $n = 1.5$  and  $L$  = wavelength of the optical signal.
6. The encoder arrangement according to claim 1, wherein a prismatic body is introduced into the beam path for beam deflection and beam shaping.
7. The encoder arrangement according to claim 6, wherein the prismatic body has an essentially roof-shaped base structure, and wherein the entering and the exiting beams are reflected on the interior roof surfaces.

8. The encoder arrangement according to claim 7, wherein a condenser optics is formed in the base surface of the prismatic body in the region of the entering light beam and the diffraction and interference structure is formed in the region of the exiting light beam.

9. The encoder arrangement according to claim 6, wherein the mask support and signal source are integrated in the prismatic body, and wherein a connecting plane is formed in the region of the beam entrance with a form-fit between a printed circuit board and the prism.

10. The encoder arrangement according to claim 9, wherein the printed circuit board is provided with a connector plane and that the prismatic body together with the signal source and the beam receiver are disposed on the connector plane.

11. The encoder arrangement according to claim 10, wherein the mask support is formed as a precision injection-molded part with a common integration plane for the radiation source, the prismatic body and the radiation receiver.